IN THE CLAIMS:

1   1.   (Currently Amended) <u>The file management apparatus of Claim 32 further</u>

2   <u>comprising:</u> ~~A file management apparatus which stores and manages file storage positions in a~~

3   ~~one-to-one correspondence with file names and accesses files that correspond to specified file~~

4   ~~names, the file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include a plurality of~~

6   ~~numbered pieces of data;~~

7   ~~a position information storage unit operable to store pieces of position~~

8   ~~information that indicate segment storage positions in the file storage unit, the pieces of position~~

9   ~~information being in a one-to-one correspondence with segment names, and each segment being~~

10   ~~a set of pieces of data having consecutive numbers;~~

11   an access request receiving unit operable to receive a segment access request

12   specifying a segment name;

13   a position information read unit operable to read, from the position information

14   storage unit, a piece of position information corresponding to the segment name specified in the

15   segment access request; and

16   a segment access unit operable to access a segment in the file storage unit by

17   referring to the read piece of position information.

1   2.   (Currently Amended) <u>The file management apparatus of claim 32, wherein the</u>

2   <u>piece of numerical information contained in each piece of data stored in the file storage unit is a</u>

3   <u>timecode, the file management apparatus further comprising:</u> ~~A file management apparatus~~

4   ~~which stores and manages file storage positions in a one-to-one correspondence with file names~~

5   ~~and accesses files that correspond to specified file names, the file management apparatus~~

6   ~~comprising:~~

7   ~~a file storage unit operable to store files which each include a plurality of pieces~~

8   ~~of data that have each been assigned a timecode;~~

9   ~~a position information storage unit operable to store pieces of position~~

10   ~~information that indicate segment storage positions in the file storage unit, the pieces of position~~

11   ~~information being in a one-to-one correspondence with segment names, each segment being a set~~

12   ~~of pieces of data having consecutive timecodes;~~

13   an access request receiving unit operable to receive a segment access request

14   specifying a segment name;

15   a position information read unit operable to read, from the position information

16   storage unit, a piece of position information corresponding to the segment name specified in the

17   segment access request; and

18   a segment access unit operable to access a segment in the file storage unit by

19   referring to the read piece of position information.

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1   3.   (Original) The file management apparatus of Claim 2, wherein

2   each piece of segment position information includes (1) an address indicating a

3   file start storage position of a file to which the segment belongs, and either (2-1) (a) an address

4   offset indicating a size of a portion between the file start and a start of the segment and (b) an

5   address offset indicating a size of a portion between the file start and an end of the segment, or

6   (2-2) (a) an address offset indicating a size of a portion between the file start and a start of the

7   segment and (c) a size of the segment.

1	4.	(Original) The file management apparatus of Claim 3, wherein

2	the position information storage unit stores the pieces of position information in

3	the same order as the segments for each file, and

4	the file management apparatus further comprising:

5	a receiving unit operable to receive a segment name obtainment request; and

6	a segment name output unit operable to, after the receiving unit receives the

7	segment name obtainment request, refer to the position information storage unit and output to

8	outside the file management apparatus a list of segment names which each include at least (1) a

9	file name of a file to which the segment belongs and (2) a character sequence which indicates a

10	position of the segment in one or more segments belonging to the file.

1	5.	(Original) The file management apparatus of Claim 4, wherein

2	the position information storage unit stores a table showing relationships between

3	(1) file names of files to which the segments belong, (2) serial numbers of the segments in the

4	files which are assigned in order of storage in the files, and (3) pieces of position information,

5	and

6	the position information read unit, after receiving a segment name, refers to the

7	table to detect a piece of position information that corresponds to a file name and a serial number

8	of the segment which are included in the segment name, and reads the detected piece of position

9	information from the table.

1	6.	(Currently Amended) The file management apparatus of Claim 32, wherein the

2	piece of numerical information contained in each piece of data stored in the file storage unit is a

3	timecode, and the file storage unit further stores, as an entry that corresponds to a file name of

4 the file, position information that indicates a storage position of the file in the file storage unit,

5 the file management apparatus further comprising: A file management apparatus which stores

6 and manages file storage positions in a one-to-one correspondence with file names and accesses

7 files that correspond to specified file names, the file management apparatus comprising:

8 a file storage unit operable to store files which each include a plurality of pieces

9 of data that have each been assigned a timecode;

10 a first position information storage unit operable to store pieces of position

11 information that indicate file storage positions in the file storage unit, the pieces of position

12 information being in a one-to-one correspondence with file names;

13 a second position information storage unit operable to store pieces of position

14 information that indicate segment storage positions in the file storage unit, the pieces of position

15 information being in a one-to-one correspondence with segment names, and each segment being

16 a set of pieces of data having consecutive timecodes;

17 an access request receiving unit operable to receive an access request specifying

18 an access target name which is either a segment name or a file name;

19 a judgement unit operable to judge whether the access target name is a segment

20 name or a file name;

21 a position information read unit operable to read, from either the first position

22 information storage unit or the second position information storage unit, a piece of position

23 information corresponding to the access target name judged by the judgement unit; and

24 an access unit operable to access either a segment or a file stored in the file

25 storage unit by referring to the read piece of position information.

1   7.   (Original) The file management apparatus of Claim 6, wherein

2   the judgement unit judges that the access target name is a segment name when the

3   access target name includes a name of a file stored in the file storage unit and a character

4   sequence indicating a serial number of a segment in the file.

1   8.   (Currently Amended) <u>The file management apparatus of Claim 32 further</u>

2   <u>comprising:</u> ~~A file management apparatus which stores and manages file storage positions in a~~

3   ~~one-to-one correspondence with file names and accesses files that correspond to specified file~~

4   ~~names, the file management apparatus comprising:~~

5   a file obtaining unit operable to obtain files which each include a plurality of

6   pieces of video data that have each been assigned a timecode, and store the obtained files in a file

7   storage unit;

8   ~~the file storage unit operable to store the obtained files;~~

9   ~~a position information obtaining unit operable to recognize each set of pieces of~~

10   ~~data having consecutive timecodes as a segment, obtain pieces of position information that~~

11   ~~indicate segment storage positions in the file storage unit, and store the obtained pieces of~~

12   ~~position information in a position information storage unit;~~

13   ~~the position information storage unit operable to store the obtained pieces of~~

14   ~~position information;~~

15   a segment access request receiving unit operable to receive a segment access

16   request specifying a segment;

17   a position information read unit operable to read, from the position information

18 storage unit, a piece of position information corresponding to the segment specified in the

19 segment access request; and

20   a segment access unit operable to access the segment in the file storage unit by

21 referring to the read piece of position information.

1   9.   (Currently Amended) <u>The file management apparatus of Claim 32 further</u>

2 <u>comprising:</u> ~~A file management apparatus which stores and manages file storage positions in a~~

3 ~~one-to-one correspondence with file names and accesses files that correspond to specified file~~

4 ~~names, the file management apparatus comprising:~~

5   a file obtaining unit operable to obtain files which each include a plurality of

6 pieces of video data that have each been assigned a timecode, and store the obtained files in a file

7 storage unit;

8   ~~the file storage unit operable to store the obtained files;~~

9   ~~a segment identifying unit operable to recognize each set of pieces of video data~~

10 ~~having consecutive timecodes as a segment;~~

11   ~~a position information creating unit operable to create pieces of position~~

12 ~~information that indicate storage positions of the identified segments in the file storage unit, and~~

13 ~~store the created pieces of position information in a position information storage unit;~~

14   ~~the position information storage unit operable to store the created pieces of~~

15 ~~position information;~~

16   a segment access request receiving unit operable to receive a segment access

17 request specifying a segment;

18   a position information read unit operable to read, from the position information

19   storage unit, a piece of position information corresponding to the segment specified in the

20   segment access request; and

21   a segment access unit operable to access the segment in the file storage unit by

22   referring to the read piece of position information.

1   10.   (Currently Amended) <u>The file management apparatus of Claim 34 further</u>

2   <u>comprising:</u> A file management apparatus which stores and manages file storage positions in a

3   one-to-one correspondence with file names and accesses files that correspond to specified file

4   names, the file management apparatus comprising:

5   a file storage unit operable to store files which each include one or more segments

6   that are each a logical unit;

7   a position information storage unit operable to store pieces of position

8   information that indicate segment storage positions in the file storage unit;

9   an access request receiving unit operable to receive a segment set access request

10   specifying a segment set name, each segment set being composed of all segments in a file, and

11   each segment set name including a name of the file and a character sequence unique to segment

12   set names;

13   a position information read unit operable to identify a file to which a segment set

14   corresponding to the specified segment set name belongs, and read, from the position

15   information storage unit, pieces of position information corresponding to all segments belonging

16   to the identified file, recognizing the read pieces of position information as a piece of position

17   information of the segment set; and

18   a segment set access unit operable to access the segment set in the file storage unit

19 by referring to the piece of position information of the segment set.

1   11.   (Original) The file management apparatus of Claim 10, wherein

2   each piece of segment position information includes (1) an address indicating a

3   file start storage position of a file to which the segment belongs, and either (2-1) (a) an address

4   offset indicating a size of a portion between the file start and a start of the segment and (b) an

5   address offset indicating a size of a portion between the file start and an end of the segment, or

6   (2-2) (a) an address offset indicating a size of a portion between the file start and a start of the

7   segment and (c) a size of the segment.

1   12.   (Original) The file management apparatus of Claim 11 further comprising:

2   a receiving unit operable to receive a segment set name obtainment request; and

3   a segment set name output unit operable to, after the receiving unit receives the

4   segment set name obtainment request, refer to the position information storage unit and output to

5   outside the file management apparatus a list of segment set names which each include (1) a file

6   name of a file to which the segment set belongs and (2) a character sequence unique to segment

7   set names.

1   13.   (Currently Amended) The file management apparatus of Claim ~~10~~ 12, wherein

2   each piece of data includes a piece of video data to which a timecode has been

3   assigned; and

4   the segment judging unit judges whether two timecodes assigned to two pieces of

5   video data are continuous.

6   ~~file includes a plurality of pieces of video data that have each been assigned a~~

7   ~~timecode, and~~

8   ~~the file management apparatus further comprises:~~

9   ~~a segment identifying unit operable to recognize each set of pieces of video data~~

10   ~~having consecutive timecodes as a segment; and~~

11   ~~a position information creating unit operable to create pieces of position~~

12   ~~information that indicate storage positions of the identified segments in the file storage unit, and~~

13   ~~store the created pieces of position information in the position information storage unit.~~

1   14.   (Currently Amended) <u>The file management apparatus of claim 34 further</u>

2   <u>comprising:</u> ~~A file management apparatus which stores and manages file storage positions in a~~

3   ~~one-to-one correspondence with file names and accesses files that correspond to specified file~~

4   ~~names, the file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include one or more segments~~

6   ~~that are each a logical unit;~~

7   ~~a first position information storage unit operable to store pieces of position~~

8   ~~information that indicate file storage positions in the file storage unit, the pieces of position~~

9   ~~information being in a one-to-one correspondence with file names;~~

10   ~~a second position information storage unit operable to store pieces of position~~

11   ~~information that indicate segment storage positions in the file storage unit;~~

12   an access request receiving unit operable to receive an access request specifying

13   an access target name;

14   a judgement unit operable to judge whether the access target name is a segment

15 set name or a file name, each segment set being a set of all segments included in one file;

16   a position information read unit operable to read, from either the <u>file storage unit</u>

17 ~~first position information storage unit~~ or the ~~second~~ position information storage unit, a piece of

18 position information corresponding to the access target name judged by the judgement unit; and

19   an access unit operable to access either a segment set or a file stored in the file

20 storage unit by referring to the read piece of position information.

1   15.   (Original) The file management apparatus of Claim 14, wherein

2   the judgement unit judges that the access target name is a segment set name when

3   the access target name includes a name of a file stored in the file storage unit and a character

4   sequence unique to segment set names.

1   16.   (Currently Amended) <u>The file management apparatus of claim 32, wherein</u> ~~A file~~

2   ~~management apparatus which stores and manages file storage positions in a one-to-one~~

3   ~~correspondence with file names and accesses files that correspond to specified file names, the~~

4   ~~file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include a plurality of pieces~~

6   ~~of data that have each been assigned a timecode;~~

7   ~~a position information storage unit operable to store pieces of position~~

8   ~~information that indicate positions of free spaces in the files, each free space not storing a~~

9   ~~segment, and each segment being a set of pieces of data having consecutive timecodes;~~

10   <u>the position information storage unit stores position information that indicates a</u>

11 <u>position of a free space storing no data, the file management apparatus further comprising:</u>

12   an add request receiving unit operable to receive a segment add request which

13 requests to add a new segment to a file;

14   a segment obtaining unit operable to obtain a new segment;

15   a position information read unit operable to read, from the position information

16 storage unit, a piece of free space position information; and

17   a segment add unit operable to add the new segment to the file storage unit by

18 referring to the read piece of free space position information.

1   17. (Currently Amended) The file management apparatus of claim 32, wherein ~~A file~~

2 ~~management apparatus which stores and manages file storage positions in a one-to-one~~

3 ~~correspondence with file names and accesses files that correspond to specified file names, the~~

4 ~~file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include a plurality of pieces~~

6 ~~of data that have each been assigned a timecode;~~

7   ~~a position information storage unit operable to store pieces of free space position~~

8 ~~information that indicate positions of free spaces in the files, each free space not storing a~~

9 ~~segment, and also store pieces of segment position information that indicate positions of~~

10 ~~segments in the files, each segment being a set of pieces of data having consecutive timecodes;~~

11   the position information storage unit stores position information that indicates a

12 position of a free space storing no data, the file management apparatus further comprising:

13   an add request receiving unit operable to receive a segment set add request

14 specifying (1) an add destination file and (2) a source file including a segment set which is to be

15 added to the add destination file;

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16   a position information read unit operable to read, from the position information

17 storage unit, a piece of free space position information indicating a position of a free space of the

18 specified add destination file;

19   a segment set extract unit operable to extract all segments included, in the source

20 file as a segment set by referring to the pieces of segment position information stored in the

21 position information storage unit; and

22   a segment set add unit operable to add the extracted segment set to the free space

23 by referring to the read piece of free space position information.

1   18.   (Currently Amended) The file management apparatus of claim 32, wherein A file

2   ~~management apparatus which stores and manages file storage positions in a one to one~~

3   ~~correspondence with file names and accesses files that correspond to specified file names, the~~

4   ~~file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include a plurality of pieces~~

6   ~~of data that have each been assigned a timecode;~~

7   ~~a position information storage unit operable to store pieces of free space position~~

8   ~~information that indicate positions of free spaces in the files, each segment being a set of pieces~~

9   ~~of data having consecutive timecodes;~~

10   the position information storage unit stores position information that indicates a

11 position of a free space storing no data, the file management apparatus further comprising:

12   an add request receiving unit operable to receive a file add request specifying (1)

13 an add destination file and (2) a source file which is to be added to the add destination file;

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14   a position information read unit operable to read, from the position information

15   storage unit, a piece of free space position information indicating a position of a free space of the

16   specified add destination file;

17   a file add unit operable to add the source file to the free space by referring to the

18   read piece of free space position information.

1   19.   (Currently Amended) <u>The file management apparatus of claim 34 further</u>

2   <u>comprising:</u> ~~A file management apparatus which stores and manages file storage positions in a~~

3   ~~one-to-one correspondence with file names and accesses files that correspond to specified file~~

4   ~~names, the file management apparatus comprising:~~

5   ~~a file storage unit operable to store files which each include one or more segments~~

6   ~~that are each a logical unit;~~

7   ~~a position information storage unit operable to store pieces of position~~

8   ~~information that indicate segment storage positions in the file storage unit;~~

9   an access request receiving unit operable to receive a segment partial set access

10   request specifying a file name and a condition, each segment partial set being a set of one or

11   more segments in one file;

12   a position information read unit operable to read, from the position information

13   storage unit, pieces of position information corresponding to all segments belonging to the

14   specified file and satisfying the specified condition, recognizing the read pieces of position

15   information as a piece of position information of the requested segment partial set; and

16   a segment partial set access unit operable to access the segment partial set by

17   referring to the piece of position information of the segment partial set.

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20.   (Currently Amended) The file management apparatus of Claim 19, wherein

each piece of data includes a piece of video data to which a timecode has been

assigned, and

the segment judging unit judges whether two timecodes assigned to two pieces of

video data are continuous. ~~each file includes video data including portions that have each been~~

~~assigned a timecode, and~~

~~the file management apparatus further comprises:~~

~~a segment identifying unit operable to recognize each set of video data portions~~

~~having consecutive timecodes as a segment; and~~

~~a position information creating unit operable to create pieces of position information that~~

~~indicate storage positions of the identified segments in the file storage unit, and store the created~~

~~pieces of position information in the position information storage unit.~~

21.   (Cancelled)

22.   (Cancelled)

23.   (Cancelled)

24.   (Cancelled)

25.   (Cancelled)

26.   (Cancelled)

27.   (Cancelled)

28.   (Cancelled)

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29.   (Cancelled)

30.   (Cancelled)

1   31.   (New) A file management apparatus for managing files stored therein,

2   comprising:

3   a file storage unit operable to store a file that contains two pieces of data, each piece of

4   data containing a piece of numerical information;

5   a segment judging unit operable, for each file stored in the file storage unit, to read the

6   two pieces of data, extract two pieces of numerical information respectively from the read two

7   pieces of data, and judge whether the two pieces of numerical information are continuous; and

8   a segment generating unit operable, if the segment judging unit judges that the two pieces

9   of numerical information are continuous, to generate a segment that contains the read two pieces

10   of data.

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1   32.   (New) The file management apparatus of claim 31, wherein

2   the segment generating unit includes:

3   a position information storage unit;

4   a position obtaining unit operable, if the segment judging unit judges that the two pieces

5   of numerical information are continuous, to obtain two pieces of position information

6   respectively of the two pieces of data from the file storage unit; and

7   a position information write unit operable to, recognizing the two pieces of data as the

8   segment, generate a segment name for identifying the recognized segment, and write into the

9   position information storage unit (ii) the segment name and (ii) the two pieces of position

10   information as an entry that corresponds to the segment name, the two pieces of position

11   information indicating a storage position of the segment.

1   33.   (New) The file management apparatus of Claim 32, wherein

2   if the segment judging unit judges that the two pieces of numerical information are not

3   continuous, the segment generating unit generates a segment that contains one of the read two

4   pieces of data, and generates another segment that contains the other of the read two pieces of

5   data.

1   34.   (New) The file management apparatus of Claim 33, wherein

2   if the segment judging unit judges that the two pieces of numerical information are not

3   continuous, the position obtaining unit obtains two pieces of position information respectively of

4   the two pieces of data from the file storage unit, and

5   the position information write unit, recognizing the two pieces of data as two different

6   segments, generates two segment names for identifying the two segments, and writes into the

7   position information storage unit (i) the two segment names and (ii) the two pieces of position

8   information as entries that respectively correspond to the two segment names, the two pieces of

9   · position information indicating storage positions of the two segments, respectively.

1   35.   (New) A file management method for use in a file management apparatus for

2   managing files stored in a file storage unit thereof, wherein each of the files stored in the file

3   storage unit contains two pieces of data which each contain a piece of numerical information, the

4   file management method comprising:

5   a segment judging step for, for each file stored in the file storage unit, reading the two

6   pieces of data, extracting two pieces of numerical information respectively from the read two

7   pieces of data, and judging whether the two pieces of numerical information are continuous; and

8   a segment generating step for, if the segment judging step judges that the two pieces of

9   numerical information are continuous, generating a segment that contains the read two pieces of

10   data.

1   36.   (New) The file management method of Claim 35, wherein

2   the file management apparatus further includes

3   a position information storage unit, and

4   the segment generating step includes:

5   a position obtaining step for, if the segment judging step judges that the two pieces of

6   numerical information are continuous, obtaining storage positions of the two pieces of data from

7   the file storage unit; and

8   a position information write step for, recognizing the two pieces of data as a segment,

9   generating a segment name for identifying the recognized segment, and writing into the position

10   information storage unit (i) the segment name and (ii) the two pieces of position information as

11   an entry that corresponds to the segment name, the two pieces of position information indicating

12   a storage position of the segment.

1   37.   (New) The file management method of Claim 36, wherein

2   if the segment judging step judges that the two pieces of numerical information are not

3   continuous, the segment generating step generates a segment that contains one of the read two

4   pieces of data, and generates another segment that contains the other of the read two pieces of

5   data.

1   38.   (New) The file management method of Claim 37, wherein

2   if the segment judging step judges that the two pieces of numerical information are not

3   continuous, the position obtaining step obtains storage positions of the two pieces of data from

4   the file storage unit, and

5   the position information write step, recognizing the two pieces of data as two different

6   segments, generates two segment names for identifying the two segments, and writes into the

7   position information storage unit (i) the two segment names and (ii) the two pieces of position

8   information as entries that respectively correspond to the two segment names, the two pieces of

9   position information indicating storage positions of the two segments, respectively.

1   39.   (New) A computer-readable recording medium that stores a file management

2   program for use in a file management apparatus for managing files stored in a file storage unit

3   thereof, wherein each of the files stored in the file storage unit contains two pieces of data which

4   each contain a piece of numerical information, the file management program comprising:

5   a segment judging step for, for each file stored in the file storage unit, reading the two

6   pieces of data, extracting two pieces of numerical information respectively from the read two

7   pieces of data, and judging whether the two pieces of numerical information are continuous; and

8   a segment generating step for, if the segment judging step judges that the two pieces of

9   numerical information are continuous, generating a segment that contains the read two pieces of

10   data.

1   40.   (New) The computer-readable recording medium of Claim 39, wherein

2   the file management apparatus further includes

3   a position information storage unit, and

4   the segment generating step includes:

5   a position obtaining step for, if the segment judging step judges that the two pieces of

6   numerical information are continuous, obtaining storage positions of the two pieces of data from

7   the file storage unit; and

8   a position information write step for, recognizing the two pieces of data as a segment,

9   generating a segment name for identifying the recognized segment, and writing into the position

10   information storage unit (i) the segment name and (ii) the two pieces of position information as

11   an entry that corresponds to the segment name, the two pieces of position information indicating

12   a storage position of the segment.

1   41.   (New) The computer-readable recording medium of Claim 40, wherein

2   if the segment judging step judges that the two pieces of numerical information are not

3   continuous, the segment generating step generates a segment that contains one of the read two

4   pieces of data, and generates another segment that contains the other of the read two pieces of

5   data.

1   42.   (New) The computer-readable recording medium of Claim 41, wherein

2   if the segment judging step judges that the two pieces of numerical information are not

3   continuous, the position obtaining step obtains storage positions of the two pieces of data from

4   the file storage unit, and

5   the position information write step, recognizing the two pieces of data as two different

6   segments, generates two segment names for identifying the two segments, and writes into the

7   position information storage unit (i) the two segment names and (ii) the two pieces of position

8   information as entries that respectively correspond to the two segment names, the two pieces of

9   position information indicating storage positions of the two segments, respectively.